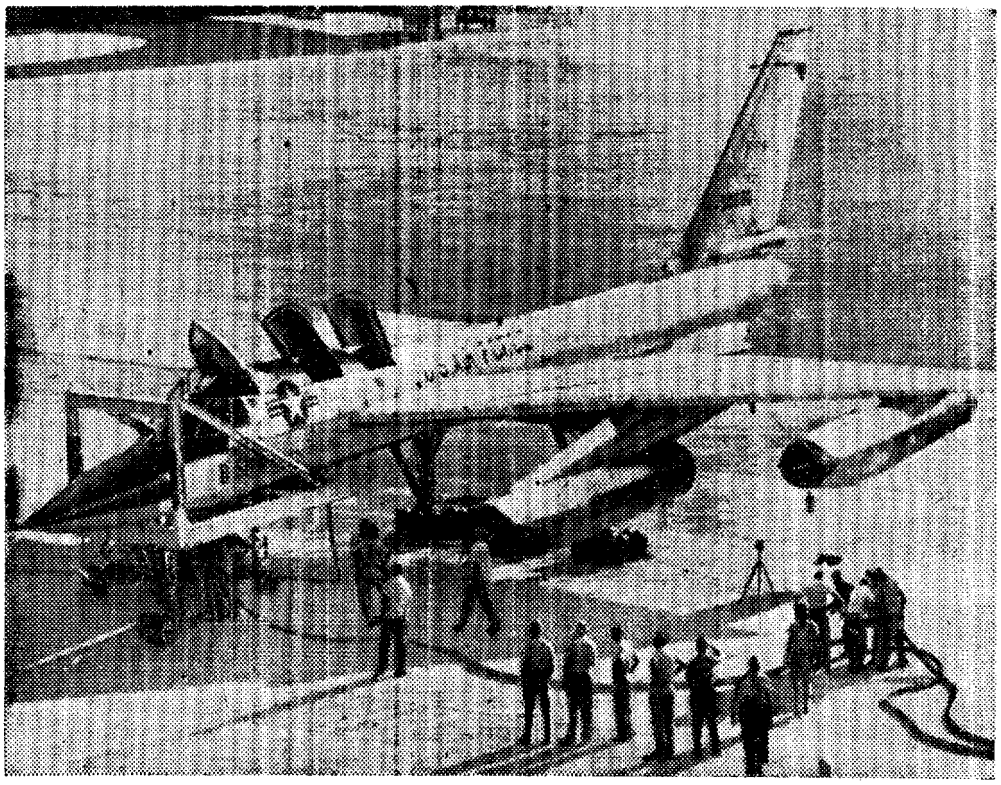
First Supersonic Bomber Is Still Four Years Away



Associated Press

PROTOTYPE OF SUPERSONIC BOMBER — Experimental model of this country's first supersonic bomber, the medium-range B-58, which is slated to replace the B-47. The model made its first flight last month but the final production model of the B-58 is not expected to be operational until 1960.

'Indecision' Cited on B-58 Started in '49

Does Kremlin Have One Now?

This is the fifth in a series of articles based on a six-week survey by a team of New York Herald Tribune reporters documenting a serious situation in military aircraft production.

By Robert S. Bird
and Tom Lambert

This country's first supersonic bomber, the multi-jet medium-range B-58, made its first flight —in prototype model only—on Veteran's Day last month.

That was seven and a half years after the Pentagon and Air Force began their first formal study for a critically needed supersonic bomber against the Soviet threat.

Whether or not the Soviets already have a supersonic bomber is the Kremlin's secret. Certainly it would not surprise anybody if they have.

Seven and a half years to prototype is, of course, only the partial lead time for the "Hustler," as the B-58 is called. A prototype is only an experimental plane. No production model of the B-58 is expected to be flying in the Air Force operational commands until 1960 at the earliest.

That will make eleven and a half years' total lead time from first study to first operational models. The question is, where will the Soviets be with supersonic bombers in 1960?

The B-58, a delta-wing made by Convair, will replace the present B-47 medium-range jet bomber. With new air-refueling techniques the "Hustler" could be used as an intercontinental carrier of the nuclear bombs.

Why this long lead time for the nation's first supersoic bomber?

Most of this time consumed from first study to prototype was Pentagon and Air Force "decision time"—or "indecision time," it was time taken in their making up their minds on what they wanted.

True, the design of the B-58 entails great technological advances. And these must be weighed carefully.

But in the light of virtual unanimous industry complaint

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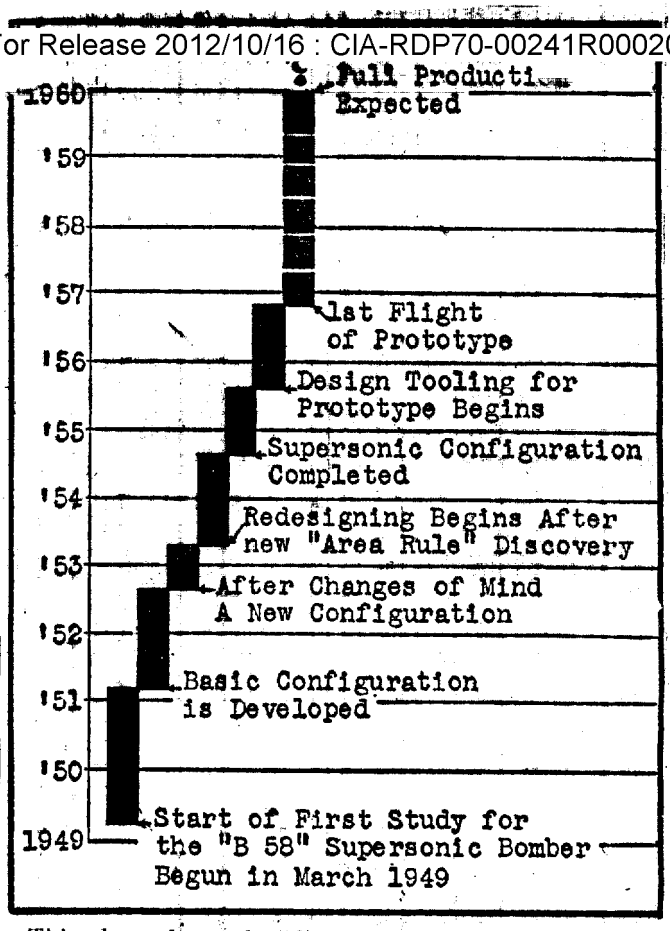

This chart shows the "life history" of America's first supersonic jet bomber, the Convair B-58 "Hustler," which will not be in production until 1960. The time spans in the chart reflect the slowness of Pentagon and Air Force decisions in the design and development stages up to the first prototype flight last month. The U. S. S. R. is believed to be working on an advanced supersonic bomber and may already have one.

(Continued from page one)

against unnecessary delays of the official agencies in making design and development decisions (and considerable private agreement with industry by many Pentagon officials), it is evident that the same leisurely pace obtained in the case of the B-58.

Starting with the first study in the spring of 1949, it was not until two years later, in the spring of 1951, that the Pentagon and Air Force had what might be called the plane's first basic configuration. Then for nine months there were more changes of mind before Washington felt it was in a position to make firm decisions on basic requirements for this plane.

Even so, the "final" configuration of the B-58 was not settled upon until the summer of 1952. And then came the breakthrough in aerodynamics technology called the "area rule," which enabled the aircraft industry to design far better supersonic shapes. Now the airframe had to be redesigned to conform with the area rule. By this time it was spring, 1953.

More than a year later, the redesigning was still going on, and so were the decisions and delays in making decisions.

Finally, by 1955, design detail was virtually completed. Convair now was able to begin tooling for the building of the prototype. And the prototype was completed and ready for flight within a year.

It had been clear for some years that this country would have to have a supersonic bomber until such time as the nuclear bomb missiles were perfected. But that date even now is not in sight.

Certainly one reason the "Hustler" is coming in late is because of protracted decision-making by top Pentagon and Air Force echelons during design and development phases. But the delays at the hands of the lower echelon bureaucracy within the Air Force are equally onerous and time-wasting, according to aircraft industry men.

"They ask us," said a top aircraft designer, speaking about the Pentagon and the Air Force, "to build into tomorrow's airplanes things that go beyond all present human knowledge.

"They want magic in the plane's 'black boxes,' magic in its speed and performance, magic in its missiles. And they give us a hurry-up delivery date.

"Then they tell us we have to make this plane for tomorrow according to the experience of the past. They clamp the dead hand of the past on our arm. It's as if we were making cavalry saddles instead of the deadliest and most futuristic electronic-brained weapons ever dreamed up by man."

Rule-Book Regimentation Charged to Agencies

The engineer was accusing the two official agencies of imposing a rule-book regimentation on the aircraft industry's inventive genius.

The "black boxes" he mentioned are containers for the amazing complex of radar, radio, fire-control and other electronic equipment which goes into modern warplanes. America's military airpower cannot function without the "black boxes." They perform incredible feats.

The "black boxes" for some planes now being engineered will make the pilot little more than

a passenger along for the ride, to be on call if the "black boxes" malfunction.

New warplanes are perhaps the most automatic machines yet invented by man. A man on the ground, with his finger on a button, guides the planes from takeoff to landing, and "black boxes" do the rest. In the wink of an electronic eye they search and find an enemy aircraft or missile hurtling through the sky and lock on its track. They drive the plane toward the enemy, figure range and angle of attack and then fire missiles, rockets or guns at the target.

The men who make these ultra-advanced aircraft say they could turn them out more speedily if it were not for Air Force and Pentagon regimentation in the "specifications" system and the vast machinery for administering it.

Specifications, or "specs" as the industry calls them, are the Pentagon's and Air Force's detailed directions—contained in aircraft manufacturing contracts—for building planes according to specified detail down to every last rivet and nameplate.

Unwieldy Organization Supervises Specifications

The supervision of this vast detail rests largely in an organization so unwieldly that it is called "the system," by people in the aircraft industry. This organization so unwieldly that it Materiel Command, is centered at Wright-Patterson Air Force Base, Dayton, Ohio. It is staffed largely by colonels and junior officers and civil service "bureaucrats," as the aircraft industry terms them.

"Our trouble is," explained the same designer quoted earlier, "that the making of these very advanced airplanes strains all the arts of technology. We must have freedom from bureaucracy to get the answers that no man knows today. 'Specs' in general represent the experience of the past; they're not much good in trying to build airplanes for tomorrow. They only hold us up while we try to make breakthroughs in human knowledge."

The aircraft industry has nothing against the general idea of specifications. Manufacturers must have specifications to guide them and the Pentagon and Air Force must have guarantees that they will get what they order.

Indu[illegible] Gripes Over Bureaucratic Rigidity

The industry's gripes and anguish are over the Pentagon's and Air Force's minute attention to detail, and what plane-makers call the rigidity, pettiness and dictatorial fashion in which the bureaucracy requires that directions be followed; even, in many cases, when they don't make sense. And over the endless buck-passing and delays when reasonable requests are made for authority to deviate from "specs."

In a typical case, such a request would be addressed to the Air Force or Pentagon agency supervising the particular project. It would go to an officer who might or might not have authority to grant the request. Industry men say many such officers are competent men genuinely interested in advancing the project. But others, they assert are bucking for promotion and have no desire to stick out their necks for any "deviation." Or the request might be passed down the hall to some civilian laboratory employee quite remote from the particular industry problem and not deeply interested in it.

A typical result in such a case as above would be that the aircraft company would dispatch its "circuit riders" to appeal the case. The latter are engineers who travel from one Pentagon or Air Force agency head to another to explain, discuss and plead for permission to "deviate" from specifications.

"These delays from deviation requests have a serious cumulative effect on lead time," said the director of an electronics laboratory. "For example, a particular vacuum tube in a 'black box' may heat up a bit too fast. We see that it would be better to move it away from the heat of the surrounding tubes. But to change its position, we have to get a deviation from 'specs.' Getting such permission takes a minimum of a month, probably more.

Nobody Has Au[illegible]ity To Decide on Deviations

"The Air Force has this system, we suppose, because some changes would really foul things up. The electronics system is packed so tightly into a plane that a small change could mean a change in the fuselage. But, internal changes in a 'black box' wouldn't change the airframe structure and we feel such deviations should be left to our judgment. They are not. The Air Force has hundreds of men in our plant here, overseeing things. But none of them has the authority to make decisions on deviations."

There are complaints also about the Pentagon and Air Force from jet engine manufacturers, complaints more against the high than low level officialdom, complaints which add up to longer lead time.

The United States and the Soviets have alternated in the lead in this vitally important field. Until the Moscow air show in 1954, the Pentagon and Air Force assumed that American engines were superior. The four huge jets powering the Soviet Bison as it whistled over Moscow caused consternation. Each engine was estimated to produce possibly 20,000 pounds thrust, much more power yield than any American engine of that date could furnish.

As of today, however, experts believe this country's jet engines at least are on a par with Soviet power plants.

One American manufacturer of jet engines however bemoaned to the Herald Tribune the "lack of communications" between various Pentagon and Air Force supervisory agencies.

His company's engine specialists frequently have to brief eight to ten Pentagon and Air Force groups on reasons for changes in their power plants. Although written outlines of such changes are mailed or sent earlier to the groups to be briefed, the briefing team rarely finds that the men who are involved in the project know anything about the proposed alterations. The result? Additional delay.

Modification Decisions Cause More Delays

What applies to delay in obtaining permission for deviations from specifications applies just as much, according to industry men, to modifications in "hardware" already in production. Such "mods," as they are called went into the General Electric J-47 jet engine at the rate of nine per day for nine years. "Mods" are being made literally every day on the B-52 jet bomber and the F-102 supersonic fighter.

The aircraft industry accepts the need, even the urgency, for such modifications; in fact, industry generates a big share of them.

"Otherwise," a production engineer explained. "the airplane would fast become obsolete."

But the Air Force must approve such modifications formally and that too entails delay. Air Force officers explain on their side that such changes cannot be approved lightly, that they must be studied for all possible effects.

Aircraft manufacturers do not argue this point, but they insist that decisions on modifications can be reached more quickly.

"They waste time on decision-making," one aircraft executive said, speaking of the Pentagon and Air Force, "even on the upper levels. The Pentagon people seem to me just to huddle together and mill around until somebody with guts steps forward and takes the lead.

"Its like when Babe Ruth played center field; if you stay within a fifteen-foot circle, you won't drop many fly balls."